

550, 174

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
21 October 2004 (21.10.2004)

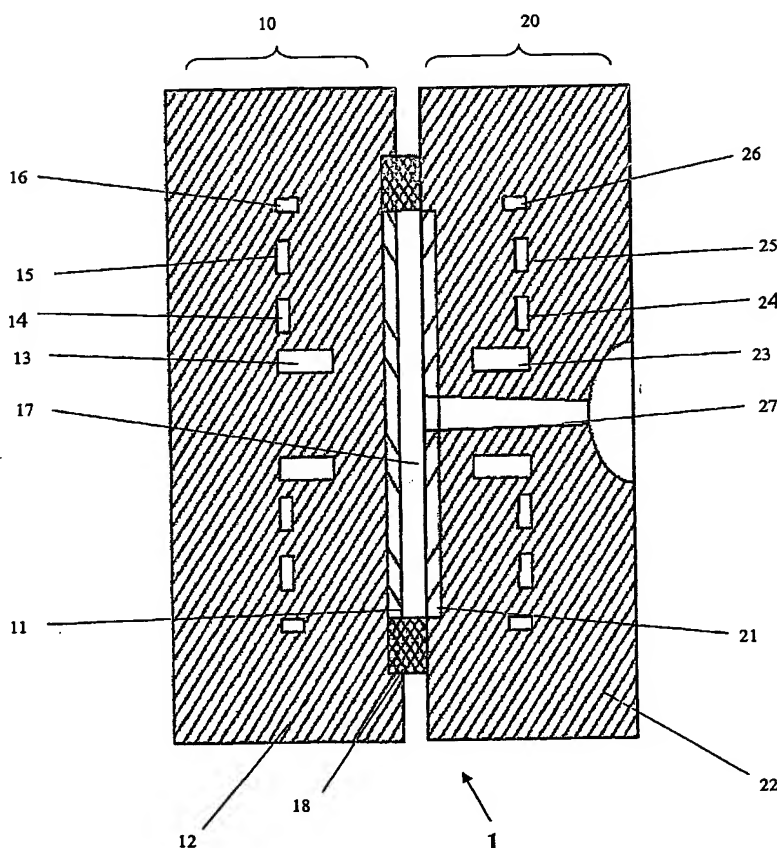
PCT

(10) International Publication Number
WO 2004/089597 A1

- (51) International Patent Classification⁷: **B29C 45/73** (72) Inventor: **THOMPSON, Robert, F.**; 1 Landing Drive, Kennebunk, ME 04043 (US).
- (21) International Application Number: **PCT/US2004/009921** (74) Agent: **GRIBOK, Stephan, P.**; Duane Morris LLP, One Liberty Place, 1650 Market Street, Philadelphia, PA 19103-7396 (US).
- (22) International Filing Date: **31 March 2004 (31.03.2004)**
- (25) Filing Language: **English** (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (26) Publication Language: **English**
- (30) Priority Data: **60/459,104** **1 April 2003 (01.04.2003)** **US**
- (71) Applicant (for US only): **BARESICH, Frank, J.** [US/US]; 102 Oldfield Court, Centerville, GA 31028 (US).
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
- (71) Applicant (for all designated States except US): **THERMAL WAVE MOLDING CORP.** [US/US]; 3801 N.E. 207th Street, Unit 902, Aventura, FL 33180 (US).

[Continued on next page]

(54) Title: **MOLD AND PROCESS FOR MAKING A VERY THIN WALL ARTICLE**



(57) Abstract: An injection mold and process are arranged to produce very thin articles, such as data discs. Molten plastic is injected into mold parts forming a thin cavity (17), in a cyclic molding process wherein the mold parts are subjected to a substantially constant temperature stimulus and rise and fall in temperature during injection and cooling of the molten plastic. Temperature boosting thermal insulation layers (11, 21) are placed along at least certain parts of the molding cavity surface. This elevates the temperature of the molted melt material for a time during injection. According to a calculated relationship, this thermal insulation is sized to permit the thin mold cavity to fill before heat transfer to the mold parts solidifies the molding material and blocks further flow. The temperature boosters can be contoured in thickness.

WO 2004/089597 A1



Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.